Arjuna JEE 2023

Basics of Mathematics

DPP-06

1. Values of: $\log_{(\sqrt{3}-\sqrt{2})}\left(5-2\sqrt{6}\right)$ is

(1) –2 (2) $\frac{1}{2}$

(3) 2 (4) $-\frac{1}{2}$

2. Value of: $\log_3\left(\log_2 512\right)$ is equal to

(1) $\frac{1}{2}$ (2) 2

(3) –2 (4) $-\frac{1}{2}$

3. Value of: $\log_2(\sqrt{15}-\sqrt{7})+\log_2(\sqrt{15}+\sqrt{7})=$

(1) 0

(2) 3

(3) $\frac{3}{2}$

(4) Some irrational number

4. Value ot x satisfying: $\log_5(\log_4 x)=0$

(1) 0 (2) 1

(3) 4 (4) 5

5. Simplified value of expression:

$\log_6 18+\log_6 2-\log_2 3-\log_2\left(\frac{1}{3}\right)=$

(1) 2 (2) 1

(3) 0 (4) –1

6. Value of $\log_{\left(\frac{1}{7}\right)} 49$ is equal to:

(1) 2 (2) –2

(3) 7 (4) 1/7

7. Value of $\log_2 8+\log_{\frac{1}{2}} 4-\log_9\frac{1}{3}=$

(1) $\frac{9}{2}$ (2) $\frac{-1}{2}$

(3) $\frac{3}{2}$ (4) $\frac{1}{2}$

8. $\frac{1}{\log_{\sqrt{bc}} abc}+\frac{1}{\log_{\sqrt{ca}} abc}+\frac{1}{\log_{\sqrt{ab}} abc}$, has the value equal to

(1) 1/2 (2) 1

(3) 2 (4) 4

9. $\frac{1}{1+\log_b a+\log_b c}+\frac{1}{1+\log_c a+\log_c b}$

$+\frac{1}{1+\log_a b+\log_a c}$, has the value of equal to

(1) abc (2) $\frac{1}{abc}$

(3) 0 (4) 1

10. The value of $81^{(1/\log_5 3)}+27^{\log_9 36}+3^{4/\log_7 9}$

(1) 49 (2) 625

(3) 216 (4) 890

11. If $a = \log_{24} 12$, $b = \log_{36} 24$ and $c = \log_{48} 36$, then abc =

(1) $2bc - 1$ (2) $2bc + 1$

(3) $bc - 1$ (4) $bc + 1$

12. If $\log_{10} x = y$, then $\log_{1000} x^2$ is equal to

(1) y^2 (2) $2y$

(3) $3y/2$ (4) $2y/3$

13. If x = 198! (Where $n! = 1 \times 2 \times 3 \times ... \times n$) Then the value of expression

$\frac{1}{\log_2 x}+\frac{1}{\log_3 x}+\frac{1}{\log_4 x}+...+\frac{1}{\log_{198} x}$, is

(1) – 1 (2) 0

(3) 1 (4) 198

14. The number of solutions of the equation $\log_4 (x - 1) = \log_2 (x - 3)$, is

(1) 3 (2) 1

(3) 2 (4) 0

15. If $y = 2^{1/\log_x 8}$, then x equal to

(1) y (2) y^2

(3) y^3 (4) None of these

Answer Key

1. (3)
2. (2)
3. (2)
4. (3)
5. (1)
6. (2)
7. (3)
8. (2)
9. (4)
10. (4)
11. (1)
12. (4)
13. (3)
14. (2)
15. (3)

For more questions, kindly visit the library section: Link for app: https://links.physicswallah.live/vyJw

For more questions, kindly visit the library section: Link for web: https://physicswallah.live/tabs/tabs/library-tab

PW Mobile APP: https://physicswala.page.link/?type=contact-us&data=open

For PW Website: https://www.physicswallah.live/contact-us